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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BLACKWELL RUDASIL, GWENDOLYN A

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,066

Applicant(s)

STACHOWIAK, GRZEGORZ

Examiner

Gwendolyn A. Blackwell-Rudasill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 22 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 24 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/20/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-21 and 24, drawn to a coated article, classified in class 428, subclass 432.
 - II. Claims 22-23, drawn to method of making, classified in class 204, subclass 192.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group II and Group I are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process. Instead of sputtering the layers onto the substrate, the layers can be formed through lamination or chemical vapor deposition.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Joseph Rhoa on March 25, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-21 and 24. Affirmation of this election must be made by applicant in replying to this Office action. Claims

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22-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

5. Applicant is advised that should claim 4 be found allowable, claim 15 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 6, 8-9, 11-12, 15-17, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent Application Publication no. 2002/0064662, Lingle et al.

Regarding claims 1 and 4

Lingle et al disclose a heat treatable low emissivity coated substrate having a layer system comprised of the following, (page 2, sections 0027-0037):

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at least one dielectric layer/a 1st contact layer/a 1st IR reflecting layer/a 2nd contact layer/at least one additional dielectric layer/a 3rd contact layer/a 2nd IR reflecting layer/a 4th contact layer/at least one additional dielectric layer.

The first dielectric layer can be tin oxide with a layer of silicon nitride formed thereon, (page 3, sections 0073-0074), meeting the requirements of claim 1, 4, and 15.

Regarding claims 2-3, 8, and 17

Silver is used for the IR reflecting layer, (page 4, section 0076). Table 1 demonstrates that the first and second layer can have a combined thickness of 0-800 Å, (page 5, section 0084), meeting the requirements of claim 2. Silicon nitride is used as a layer over the IR reflecting layer, (page 4, section 0081), meeting the requirements of claims 3 and 17. Aluminum in the range of 3-20 wt % can be added to the silicon nitride layer, (page 3, section 0074), meeting the requirements of claim 8.

When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or function are presumed inherent. *MPEP 2112.01*. Because the prior art exemplifies the applicant's claimed layer structure, the claimed physical property relating to the coated article having a blue glass side reflective color is inherently present in the prior art. As such, the inclusion of the claimed physical property to the claim language fails to provide patentable distinction over the prior art of record.

Regarding claims 6, 9, 11-12, and 20

The coated substrate can be used in an IG window unit or as a vehicle windshield, (page 1, section 0013), meeting the requirements 6. The coated substrate has a visible transmittance of

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at least 70%, (page 1, section 0007), meeting the requirements of claim 9, with a sheet resistance of no greater than 10.0, (page 1, section 0015), meeting the requirements of claims 11-12 and 20.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 3-6, 8-18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 5,688,585, Lingle '585 in view of United States Patent Application Publication no. 2002/0064662, Lingle '662.

Lingle '585 disclose a heat treatable coated glass substrate comprised of three layer having the following structure, (column 9, lines 45-50):



The layer structure has a visible transmission of 1-80%, an emissivity ranging from about 0.10-0.75, and a sheet resistance of about 20-500, (column 6, lines 15-35). The silicon nitride film can contain up to 6 wt% of aluminum, (column 9, lines 50-53). The layer system does not include the use of silver, (column 5, lines 45-46). Lingle '585 does not specifically disclose that an underlayer of tin oxide should be formed between the substrate and the first silicon nitride layer.

Lingle '662 disclose a heat treatable low emissivity coated substrate having a layer system comprised of the following, (page 2, sections 0027-0037):

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at least one dielectric layer/a 1st contact layer/a 1st IR reflecting layer/a 2nd contact layer/at least one additional dielectric layer/a 3rd contact layer/a 2nd IR reflecting layer/a 4th contact layer/at least one additional dielectric layer.

The first dielectric layer can be tin oxide with a layer of silicon nitride formed thereon, (page 3, sections 0073-0074). Silver, gold or any other suitable IR reflecting material is used for the IR reflecting layer, (page 4, section 0076).

Lingle '585 and Lingle '662 disclose analogous inventions related to coated substrates having low emissivity properties. Lingle '585 further disclose that another layer may be added to the three layer structure so as to effect other purposes and characteristics, (Lingle '585, column 10, lines 35-38). It would have been obvious to one skilled in the art at the time of invention to modify the layer structure of Lingle '585 with the tin oxide undercoat of Lingle '662 to enhance the antireflection properties of the film, (Lingle '662, page 3, section 0073).

10. Claims 7, 19, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application Publication no. 2002/0064662, Lingle et al as applied to claims 1 and 15 above, and further in view of the article entitled *Thermally durable sputter-deposited tin oxide films and their applications*, Ebisawa et al.

Lingle et al disclose the limitations of claims 1 and 15 above. The tin oxide provides antireflective properties to the film, (page 3, section 0073). Lingle et al does not specifically disclose that the tin oxide layer also contains nitrogen.

Ebisawa et al disclose that nitrogen can be added to a tin oxide (SnON) film that is part of an antireflective coating, (page 308, 2nd paragraph).

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Lingle et al and Ebisawa et al disclose that tin oxide can be part of antireflective films. It would have been obvious to one skilled in the art at the time of invention to modify the tin oxide film of Lingle et al through the addition of nitrogen in order to protect the tin oxide film from bending and film cracks that could occur during heat treatment, (Ebisawa et al, page 308, 2nd paragraph).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


United States Patent no. 5,543,229 disclose the use of tin oxide and silicon nitride as underlayers in a multilayer coating stack.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn A. Blackwell-Rudasill whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday, 5:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


STEPHEN STEIN
PRIMARY EXAMINER

Gwendolyn A. Blackwell-Rudasill
Examiner
Art Unit 1775

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